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10/718,919

11/21/2003

Igor Timofeev

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05/16/2006

Robert C. Klinger
Jackson Walker LLP
Suite 600
2435 North Central Expressway
Richardson, TX 75080

EXAMINER

DINH, TRINH VO

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,919

Applicant(s)

TIMOFEEV ET AL.

Examiner

Trinh Vo Dinh

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-7, 9-14, 20, 21, 23 and 25-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4-7, 9, 20, 21, 23 and 29-31 is/are allowed.
- 6) ☒ Claim(s) 10-14, 16-18, 25-28 and 32-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to Applicant's communication file on 02/28/2006. The amended claim 10 and newly added claims 32-34 necessitate a new ground of rejection as discussed below.

Claims Objections

1. Applicant is advised that should claim 10 be found allowable, claim 32 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 10, 16 and 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (6,885,352).

With respect to claims 10 and 32, Lee discloses, in Fig. 5, an antenna comprising a ground plane (4)) having an upper surface and an opposing lower surface, the ground plane having a bent edges (4b) adapted to control a lateral beam lobe of the respective antenna; a plurality of dipoles (2) extending outwardly from the upper surface wherein a portion (4b) of the

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ground plane (4) is angled inwardly toward the dipoles and is configured to improve a front-to-back ratio of the antenna array (2).

Respecting claims 16 and 33-34, Lee further discloses the ground plane bent edges has a first portion (4b) angled away from the dipole, and a second portion (4b0) angled towards the dipole, and wherein the first portion (4b) angles upwardly with respect to the ground.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11-14, 17-18, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le (US 2005/0001778 of record) in view of Lee (US 6,885,352).

With respect to claim 11, Le discloses, in Fig. 1, an antenna comprising a ground plane (12, paragraph [2206]) having an upper surface and an opposing lower surface, a plurality of dipoles (16) extending outwardly from the upper surface, each antenna (16) being coupled to another adjacent antenna such that the dipoles of each antenna extend outwardly. However, Le does not suggest a portion (4b) of the ground plane (4) is angled inwardly toward the dipoles. Lee discloses a ground plane (4) wherein a portion (4b) of the ground plane (4) is angled inwardly toward the dipoles and is configured to improve a front-to-back ratio of the antenna array (2), and the respective ground planes (4) of each antenna (2) face inwardly toward one another. It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to employ Lee's ground plane to Le's antennas array in order to improve antenna performances.

With respect to claims 12-13, Le discloses the coupled antennas (360) collectively form a multi-sector antenna array extending 360°, and the antenna array comprising 3 of the antenna, each of the antennas covering generally a 120° sector.

Respecting claims 14 and 25, Le discloses a plurality of adjustment members (a shift rod in claim 14 of Le), one said adjustment member being coupled to each of the sliding dielectric members (56) of each of the antennas (14), the adjustment members adapted to adjust a beamtilt of the respective antenna, and at least one cable (76) extending across the lower surface and coupled to the set of striplines.

With respect to claims 17-18, Le discloses the dipoles (14) are configured in sets (Fig. 3), each of the dipole sets having a single respective feedline (30) coupled thereto, and the antennas (14, 16) being physically coupled to one another along their respective bend edges (Fig. 1), but being electrically isolated from one another by an electrically non-conductive member (Fig. 1).

With respect to claim 28, Le discloses the antenna array being configured as an omnidirectional antenna.

6. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Tricoles et al (USP 3,761,937).

With respect to claim 26, Lee discloses every feature of the claimed invention except a radome including at least one metal portion thereon. Tricoles discloses a radome including at least one metal portion thereon (col. 1, lines 13-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to encompass Lee's antenna with the

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metal radome of Tricoles in order to reduce the radar cross section of the aircraft (Tricoles: col. 1, lines 20+).

With respect to claim 27, Tricoles discloses metal portion (28) being an electrically conductive paint (col. 3, lines 1-5).

Allowable Subject Matter

7. Claims 1-2, 4-7, 9, 20-21, 23, and 29-31 are presently allowed.

8. The cited art of record fails to teach the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidably disposed thereupon as defined in claims 1 and 30, or a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines as defined in claims 29 and 31.

Conclusion

9. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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May 15, 2006

A handwritten signature in black ink, appearing to read "Vinhwood", followed by a long horizontal line.